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AUTOMATION AND TECHNOLOGICAL CHANGE IN BANKING.

BY- STEINER, CARL L.
MARYLAND STATE EMPLOYMENT SERVICE, BALTIMORE
BUREAU OF EMPLOYMENT SECURITY (DEPT. OF LABOR)

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DESCRIPTORS- *BANKING INDUSTRY, ELECTRONIC DATA PROCESSING, *AUTOMATION, JOB SKILLS, ORGANIZATION, OCCUPATIONAL INFORMATION, *EMPLOYMENT TRENDS, BALTIMORE, MARYLAND,

THE PURPOSES OF THIS STUDY WERE TO DETERMINE THE PERSONNEL CHANGE DIRECTLY RESULTING FROM THE INSTALLATION OF ELECTRONIC DATA PROCESSING IN ONE OF THE LARGE COMMERCIAL BANKS IN BALTIMORE, TO DESCRIBE THE PROCESSES AND JOB DUTIES INVOLVED, AND TO INDICATE HOW CHANGES HAVE AFFECTED EMPLOYMENT AND WHAT MAY BE EXPECTED IN THE FUTURE. THE USE OF THE EQUIPMENT RESULTED IN SOME SHIFTING AND RETRAINING OF PERSONNEL BUT NO UNEMPLOYMENT. ACTUALLY MORE WORKERS WERE ADDED TO CARE FOR THE INCREASED VOLUME OF BUSINESS. ONLY 48 JOBS WERE ABOLISHED WHILE 58 WERE CREATED AND 40 WERE INCREASED. ALTHOUGH THE OUTLOOK IS FOR CONTINUED GROWTH IN THE INDUSTRY, BANKERS DO NOT AGREE ON THE AMOUNT OF EMPLOYMENT EXPANSION LIKELY TO TAKE PLACE. BANKS HAVE BEEN ABLE TO FILL THE EXECUTIVE RANKS WITH HIGHER STARTING SALARIES, TRAINING PROGRAMS, AND RAPID PROMOTION BUT HAVE BEEN FORCED TO USE HANDICAPPED AND PART-TIME WORKERS SUCH AS HOUSEWIVES AND COLLEGE STUDENTS TO MEET PEAK SEASONAL DEMANDS. HOWEVER, MOST ARE USING ELECTRONIC DATA PROCESSING NOW TO MEET GROWING SHORTAGES OF CLERICAL PERSONNEL. SO FAR HIGH SPEED MACHINES ARE TOOLS FOR COPING WITH SHORTAGES RATHER THAN REPLACING EMPLOYEES. THEY ARE BEING USED TO MAKE POSSIBLE A WIDER RANGE OF SERVICES AT GREATER SPEED. BECAUSE OF THE CONSIDERABLE TIME REQUIRED TO CHANGE TO AUTOMATION AND GET THE SYSTEM WORKING, THE IMPACT OF ELECTRONIC DATA PROCESSING ON JOBS IN BANKING PROBABLY WILL NOT BE APPARENT FOR SEVERAL YEARS. THE APPENDIX CONTAINS JOB TITLES AND CODES, ORGANIZATION CHARTS, AND JOB DESCRIPTIONS FOR NEW AND EXPANDED JOBS RESULTING FROM INSTALLATION OF ELECTRONIC PROCESSING EQUIPMENT IN ONE LARGE COMMERCIAL BANK. (MM)

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Automation Manpower Services
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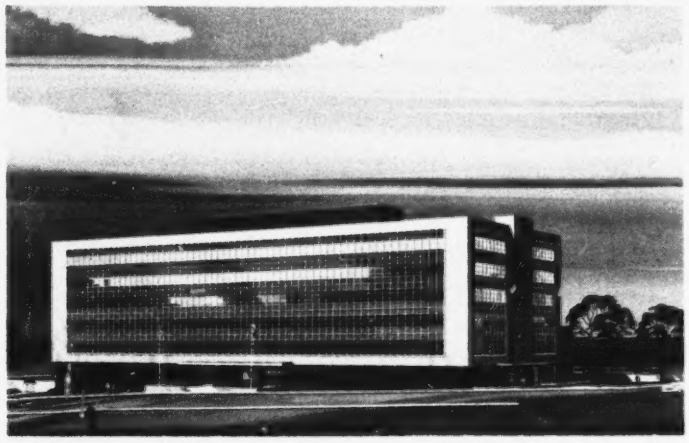

November, 1966

THE IMPACT OF TECHNOLOGICAL CHANGE IN THE BANKING INDUSTRY

MARYLAND DEPARTMENT OF
EMPLOYMENT SECURITY

STEPHEN C. CROMWELL, Executive Director

MARYLAND STATE EMPLOYMENT SERVICE
affiliated with U. S. Employment Service

J. Donn Aiken, Director

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AUTOMATION

AND

TECHNOLOGICAL CHANGE

IN

BANKING

1966

". . . Technology as such does not result in a new loss of jobs in the economy. It does destroy the jobs and occupations of individual workers; but it creates new jobs and occupations which require workers. . ."

Ewan Clague, Commissioner of Labor Statistics
U. S. Department of Labor

FOREWORD

For some time now a number of State Employment Service agencies have been conducting automation demonstration projects designed to gain experience with labor market problems arising from changing technology and mass layoffs. The projects are financed and guided by the United States Employment Service and conducted by affiliated State Employment Services.

The fundamental aim is to combine action and research to demonstrate what the Employment Service can do in rapidly changing labor markets.

In this general context, the projects are designed to:

1. Provide direct intensified personnel service to affected workers to promote occupational reorientation, minimize duration of unemployment, and to experiment with training and retraining techniques.

2. Analyze changing jobs and staffing patterns to gain information about evolving job content and training requirements in establishments affected by technological change.

3. Conduct labor market and related research in conjunction with these projects to develop procedures and methods that will assist the Employment Service in carrying out effective manpower actions in advance of the development of problems.

While the projects cover a broad range of remedial manpower actions—from the use of training funds to development of aptitude tests for new occupations--not every project includes the whole range of possible actions. Each project is tailored to the Manpower problem presented by the particular case, whether it involves layoffs, in-plant workforce adjustments, reduced hiring, or the need for all-out community action.

As each of the present and future projects reaches a point at which summarization of experience and findings is possible, reports will be prepared for this series of Automation Program Reports, so that the project results may be disseminated throughout the public Employment Service system, and used to improve manpower planning and operations.

Frank H. Cassell, Director
United States Employment Service

BUREAU OF EMPLOYMENT SECURITY, Robert C. Goodwin, Administrator

PREFACE

It is the purpose of this study to determine the personnel change which has taken place to date as a direct result of the installation of Electronic Data Processing in one of the large commercial banks in Baltimore, to describe the processes and job duties involved, and to present other material which will indicate how these changes have affected employment at the present time and what may be expected in the future.

The net effect of technological advance is progress and growth; it is both necessary and desirable. If this country does not lead the world in technology, national survival is threatened. Because of this, we must continually seek ways to increase productivity through careful planning and technological innovation. However, progress often brings problems. Certain individuals and groups will be forced out of the productive work force and into the ranks of the unemployed, as technological change makes it possible to accomplish more work with fewer workers. Where worker displacement occurs, every effort must be made to assure that the individual or group involved is given the help needed to adjust to the altered circumstances, whether it be in the form of training, retraining, relocation, or in changing from one occupation to another, and if necessary, from one industry to another.

Automation is a general term which is used in many ways. It is defined in Webster's Unabridged Dictionary as "a system or method in which many or all of the processes are automatically performed or controlled by machinery or electronic devices". In bank accounting, automation usually involves electronic data processing and in most systems is accomplished through punched cards, punched tape, magnetic tape, electro-magnetic character recognition or, depending upon the system installed, a combination of these.

The development and completion of this study was carried out under the direction of Mr. J. Donn Aiken, Director, Maryland State Employment Service by Mr. Carl L. Steiner, Occupational Analyst as Project Researcher and Compiler, with valuable suggestions provided by Miss Elizabeth L. Kennedy, State Supervisor of Employment Service Programs and Mr. George A. Hays, Automation Specialist. Employment data was furnished by the Research and Analysis Division of the Maryland Department of Employment Security. During the data collection phase a large commercial bank in Baltimore, Maryland, which was the model for this study, provided reliable data for its preparation. Acknowledgment for other source material appears in other sections of the report.

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CHAPTER 1 - INTRODUCTION

Perhaps more than any other inhabitants of the world, Americans are a check-writing people. The chances are that you are one of the nation's nearly 60 million checking account owners and that your checks are among the 15 billion which flow through the banks each year. These trim pieces of paper, so commonplace, so similar, so necessary, pay more than $4 trillion of the country's bills annually, an amount which is estimated to represent at least 90% of all annual payments. An enterprising statistician has figured that if placed end to end these checks would go around the earth 70 times, which is some sort of record for credit stretching.

CHAPTER 2 – ORIGIN OF CHECK WRITING, ITS GROWTH AND PRESENT USE

Tireless Traveler: The bank check is the world's busiest, most tireless traveler. Its formal directive "Pay to the Order of" scurries through the mails, rides in pockets and pocketbooks, rushes through that miraculously efficient facility, the clearing house, and finally finds its way back to your own files, a bit the worse for rubber stamps, maybe, but still serviceable as proof of payment.

Our credit-based economy would be inconceivable without the check-handling machinery developed and administered by commercial banks. Check credit must move swiftly, accurately and above all, safely in getting money from one account to another regardless of distance. But the method developed over the past hundred years, a method known as "clearing", meets these requirements so well that the smooth exchange of $17.5 billion through checks every 24 hours is taken for granted.

Up to the eve of the century we're celebrating, comparatively few individuals had checking accounts; they were reserved for men of importance perhaps as favors extended by banks. The growth of the economy after 1850, improvement of transportation and better postal service all sped the use of checks, especially by their chief user, business, and shortly before 1860, they were more popular than cash for paying bills.

Checks got a big boost from the establishment of the Federal Reserve System in 1913. This provided new machinery for expediting movement and banks could more easily handle the increased volume.

But the real heyday of the check came in the middle 1930's, when the special checking account appeared. This "pay-as-you-go," "no minimum balance" service accommodated millions of Americans who had felt they could not afford to tie up the sums often required as deposits against the writing of checks in regular accounts.

MOUNTAINS OF WORK: Checks are, of course, claims on commercial banks and as such must be presented for collection at the banks on which they are drawn. Ordinarily, presentment is made through another bank. Individuals or firms receiving checks usually deposit them at their banks and leave the problem of collection to those institutions. On a given business day, checks received for collection at a medium-sized bank might number in the tens of thousands while for larger banks the number might range up to several hundred thousand. At receiving banks the checks must be elaborately processed. Since each check involves a transaction between the receiving bank and the depositor, it requires individual attention on the bank's books. In addition, the bank must sort the checks according to their destination, package them, send them to the drawee bank and arrange to receive payment from the drawee.

Nor does the processing end at the receiving bank. Other institutions get in on the act. Checks drawn on local banks will be presented to drawees through local clearing houses, institutions established primarily for this purpose.

Checks drawn on out-of-town banks are sent either to city correspondent banks or to a Federal Reserve Bank, where they go through processing similar to that described in the preceding paragraph. City correspondents, in their turn, channel a large percentage of the checks they receive through their respective Federal Reserve Banks. A system of transit numbers and routing symbols, with each commercial bank assigned a specific symbol and number which are printed on its check forms, has been worked out to facilitate the transfer of checks to drawee banks.

Whether through a local clearing house, a city correspondent, or a Federal Reserve Bank, checks ultimately arrive at the drawee bank. Here they are processed still further, each check again receiving individual attention. The accounts of individual check writers must be debited and arrangements made for transferring funds to the institutions making presentment. Moreover, the checks must be sorted for return to individual check writers.

In brief, a mountain of checks involves several mountains of work. To get this work done and to insure the rapid and safe collection necessary for the smooth working of a payments system based on checks, commercial banks and Federal Reserve Banks maintain large transit departments which account for a substantial portion of total banking costs in this country. Check-handling costs at commercial banks, incurred mainly for paper work and transportation, underlie much of the service levied by these institutions.

BROADER MACHINE APPLICATIONS: The improved methods of handling checks at various points in the banking system represent but one phase of a more general revolution in data processing currently underway throughout the business world. Because commercial banking involves vast amounts of paper work, new data processing equipment has proved especially adaptable to the every-day work problems of these institutions. Equipment acquired primarily for check handling is readily adaptable to the automatic processing of numerous other internal operations. For example, commercial bank trust operations, installment loan accounting, loan and collateral records, saving accounts, Christmas and vacation club accounts and general portfolio records are but a few of the areas in which significant cost reduction may be achieved through computer application.

In brief, automated data processing equipment not only offers a solution to banking problems occasioned by a growing deluge of checks in all parts of the country but also offers the promise of improved and perhaps lower cost bank services to the public in numerous other areas. As technological improvement in electronic data processing equipment of all types is still, relatively speaking, in its infant stages, perhaps only a small part of the potential for improved efficiency has been realized. With further technological advancement limited only by human imagination and ingenuity, the future of efficiency in this area is indeed promising.

GROWING MOUNTAINS: In recent years the number of checks written has grown at a phenomenal pace. The number handled at the Federal Reserve Bank of Richmond alone rose from just under 150 million in 1950 to more than 300 million in 1962. Data shown in Figure 1 on the next page indicate that this number grew over this period at an annual rate of approximately 6%.

MICR-A REVOLUTION: With the great upsurge of checking-account activity following World War II, the banking community was forced to look for improved means of check processing in order to avoid long delays in collection and to hold down costs. The developing revolution in electronic data processing machines appeared to offer the best opportunity to do this.

In 1955, the Bank Management Commission of the American Bankers' Association, working with equipment manufacturers, check printers and representatives of commercial banks and the Federal Reserve System, appointed a committee to develop an automatic processing system for checks. Three years later the committee unanimously approved a special type font for use on check forms as a common machine language. The special type, technically styled E-13 B, was to be printed in a band on the bottom of each check in a newly developed ink bearing magnetized iron oxide particles.

The development of a common language which can be read by both the human eye and electronic machinery was a necessary first step in the mechanization of check processing.

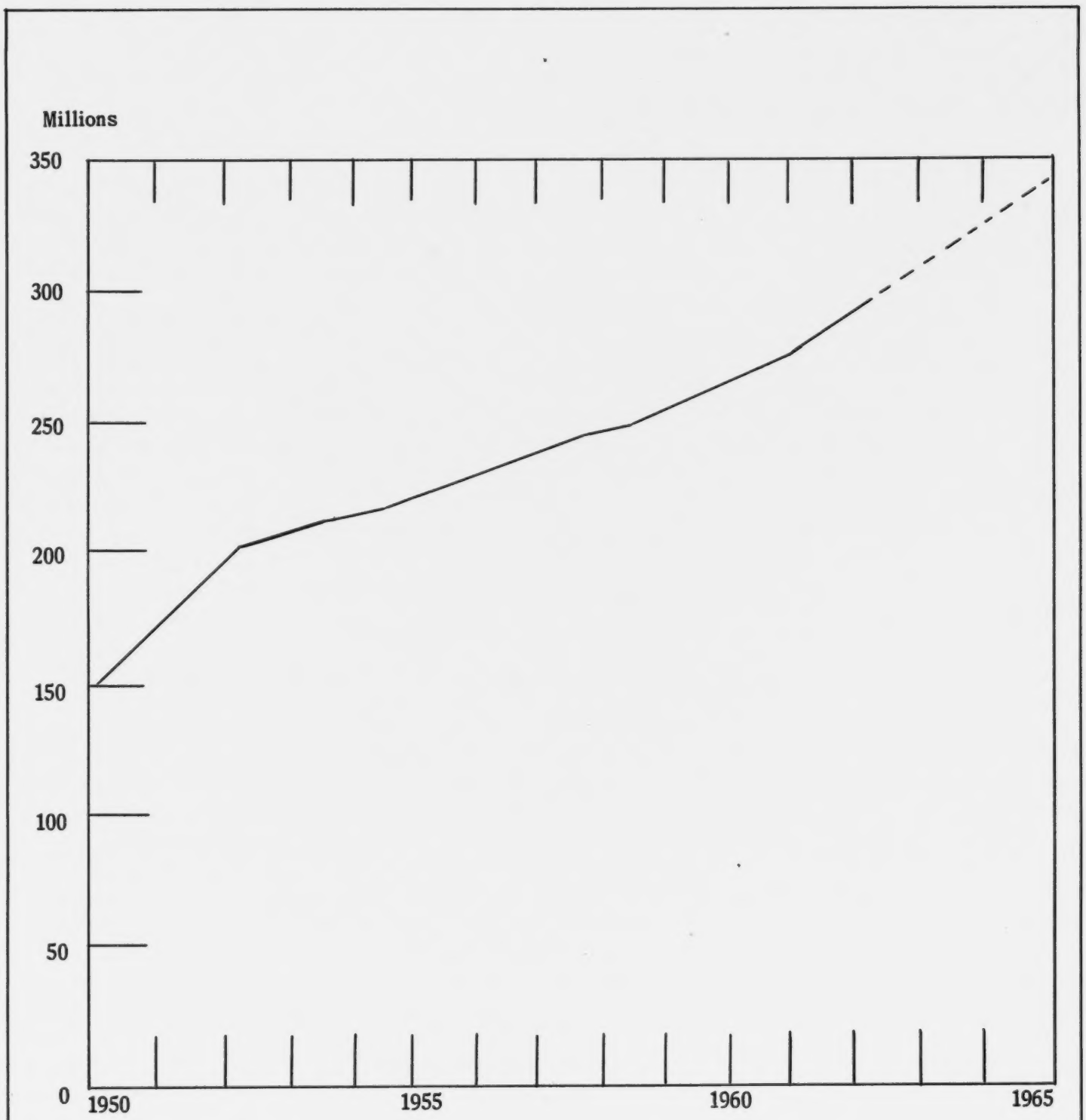


Figure 1. Number of Checks Handled Annually by the Federal Reserve Bank of Richmond 1950 – 1962

SOURCE: Federal Reserve Bank of Richmond Monthly Review, April 1963

This development has come to be known as Magnetic Ink Character Recognition, commonly abbreviated to MICR. The MICR principle has been accepted not only in this country but also in Canada, the United Kingdom, Australia and Japan. Systems based on the E-13 B magnetic type are now operational in all these countries. Moreover, it appears to be only a matter of time before Continental European countries adopt either the same system or a comparable one based on a machine language called CMC 7.

The American Bankers' Association and the Federal Reserve System have encouraged banks to print their check forms with magnetic ink characters to indicate in a single field the routing symbol-transit number of the bank. After three years of such encouragement, banks in the Fifth District were printing approximately 68% of their checks in this way.

ELECTRONIC "BRAINS": Pursuing the mechanization plans further, the Federal Reserve System contracted with the Stanford Research Institute of Menlo Park, California, for the development of equipment specifications to be presented to business machine manufacturers. About four years ago, five Federal Reserve Banks obtained equipment produced to these specifications by a number of manufacturers and launched extensive pilot tests of what amounted to new electronic systems of check processing. The tests demonstrated that the MICR principle worked well and that the new system offered a good potential for both saving time and reducing costs if the system were adopted by a large number of banks. Thus push-button handling, thanks to the cooperative effort of bankers, scientists, equipment manufacturers, and printers is now routine in many banks. In the not too distant future all banks will be proving, sorting and posting their checks mechanically, with great savings in time and operating costs. Manually-operated equipment for processing is becoming obsolescent in the face of mounting check numbers. Thus, instead of processing 1,000 checks per hour by hand, approximately 500 will be processed in a minute by mechanical means. Who could have foreseen, when the first typewriter went to work for business, that someday check processing - banking's biggest physical job - would be handled by electronic pulses (who knew much, if anything, about electronics.) And did anyone imagine that the business world would have machines that almost think?

The word "almost" is important; machines do not actually think, although it appears that they do. They do, however, make a logical analysis based on an input of programmed information, and they also correct and adjust errors. If it appears to be a dangerous prediction in these 1960's to state that a machine will never actually think, let us hope, never-the-less, that the thinking process will remain the exclusive property of the men and women who must tell the gadgets what to do.

So, we must remember that, regardless of the extent of a bank's automation, the electronic equipment which appears to run itself is being directed by skilled personnel.

CHAPTER 3 – PROGRESS

Commercial banks throughout the United States have made substantial strides toward automation and even greater advances are in prospect on the basis of plans already made.

Nearly half of all banks with total deposits of 25 million dollars or more are using, or are planning to use, automated equipment. These are mainly general purpose electronic computer systems to be used in large bookkeeping operations. Nearly all large banks and an appreciable number of smaller banks have acquired such systems.

Regular checking accounts rank foremost among the banking operations to which automated procedures are being applied. Other operations with a high volume of bookkeeping, such as special checking accounts, consumer loans and trust activities, are close behind. Automation is being least extensively applied in various low-volume operations.

Preprinting of checks in magnetic ink, with transit number and routing symbol is expected to be almost universal in the very near future. Encoding of checks with dollar amounts, however, will be confined mainly to larger banks. Only about one-fifth of the banks with total deposits of $25 million or more plan to encode checks sent to Federal Reserve or to correspondent banks for collection.

These are some of the findings of a survey conducted by the Board of Governors of the Federal Reserve System, in cooperation with Federal Reserve Banks in March 1962. The survey was made to determine the existing status and expected progress of automation at commercial banks. The major purpose of the survey was to provide information needed by the Federal Reserve System in adapting its operations to advancing technology in the field of bank bookkeeping, including arrangements for processing the increasing flow of magnetic-ink-encoded-checks through the clearing facilities of the Reserve Banks. The survey included 974 commercial banks having total deposits of 25 million or more.

Status of Automation: On the March date, more than 45% of all commercial banks in the above category had already automated some part of their bookkeeping operations or had definite plans for automation within three years. Almost 87% of these automating banks are moving toward advanced systems built around an electronic computer; the remainder will employ mainly conventional punch-card accounting equipment.

Computers were already in operation or were being installed for 178 banks. These banks hold roughly 40% of all commercial bank deposits. As might be expected, in view of the high initial cost of such systems and the risks involved in moving into relatively untried fields, larger banks have been in the vanguard in adopting computer systems. All but two of the largest banks, those with total deposits of $500 million or more, are installing computers. Most of them have the equipment on hand.

The proportion of banks with computer systems, either existing or planned, becomes progressively smaller for banks in the smaller size classes, particularly for banks with total deposits of less than $100 million. Nevertheless, 77 banks with total deposits in the $25-50 million range, or 17% of all such banks, are adopting computer systems. For most of these 77 banks, however, the computers are still in the planning stage.

On the other hand, nearly all banks automating with non-computer systems are small banks. In those districts in which the survey was extended to some of the banks with total deposits of less than $25 million, prospective automation of such banks was found to be negligible.

The progress made thus far in Maryland seems to be following the pattern of the nation, the larger banks all having installed electronic computers to process checking accounts and other large volume activities.

CHAPTER 4 – EMPLOYMENT AND ACTIVITY DATA

Employment figures for all commercial banks in Maryland, in the Baltimore Standard Metropolitan Statistical Area and for one large bank in Baltimore City are shown in Table 1. Data represent employment as of September for each year except 1965, a year in which the the figure for June was the latest available.

TABLE 1

Total employment for Commercial Banks in Maryland, the Baltimore Standard Metropolitan Statistical Area and for a typical Bank.

1958 – 1965

Year	All Banks Maryland	All Banks Balto. SMSA	One Bank Balto. City
1958	7202	4630	793
1959	7413	4592	834
1960	7694	4757	883
1961	8314	5159	880
1962	8510	5087	994
1963	9079	5311	1029
1964	9518	5414	1002
1965	9899	5446	1037

Source: Maryland Department of Employment Security - Research and Analysis Division

Employment growth in this industry during the eight year period is evident. Total state employment increased 37.4% from 1958 to 1965. Baltimore Standard Metropolitan Statistical Area, 17.6% and one bank, 30.8%. In 1958 the one bank whose figures appear above accounted for 17% of employment in this industry in the Baltimore Area; in 1965, for 19%. Therefore, a part of its acceleration may be attributed to merging with smaller banks.

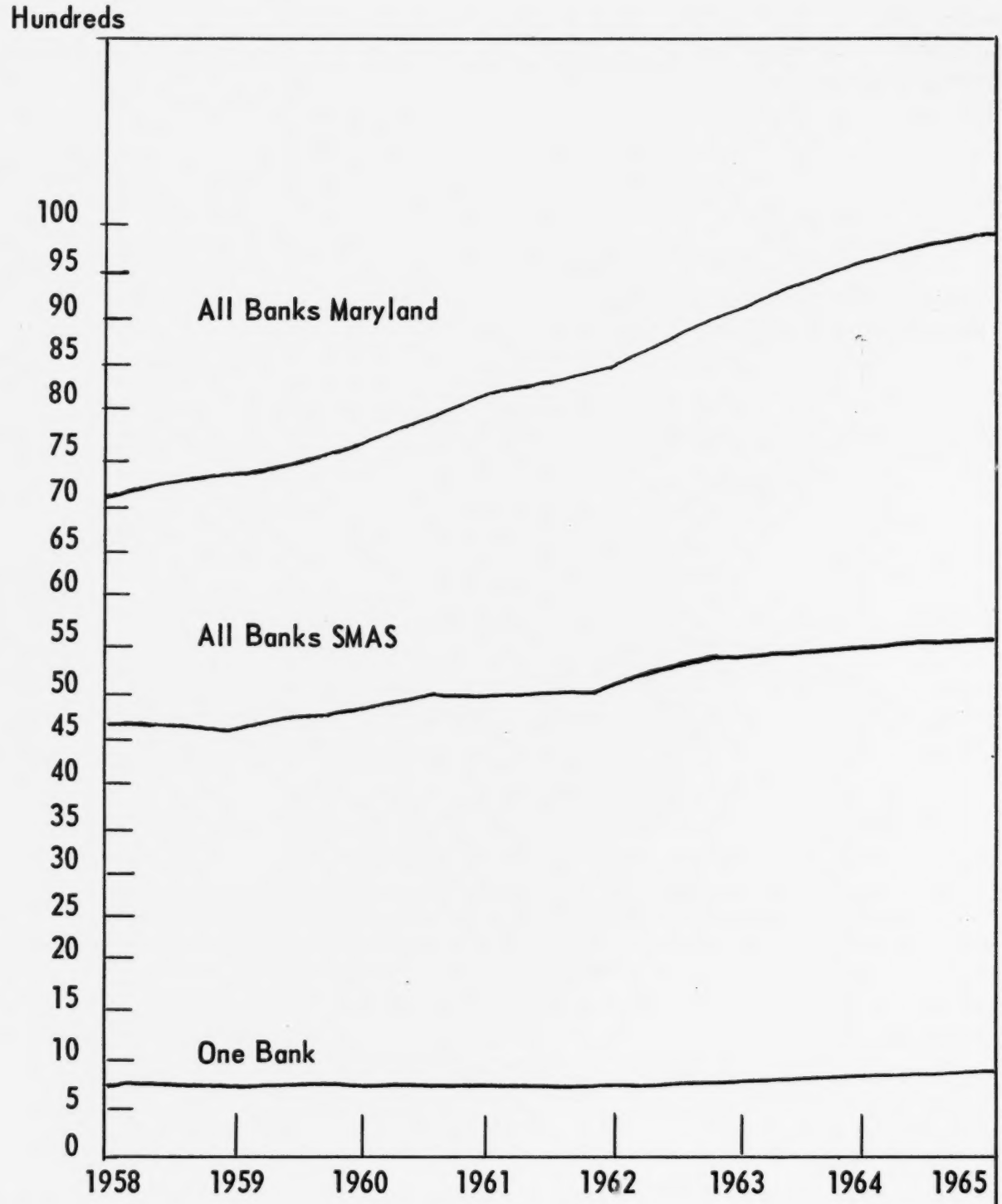


Figure 2. Employment Activity 1958 – 1965

SOURCE: Research and Analysis Department of Employment Security

Table 2 shows the banking activity of Federal Reserve Member banks in the State of Maryland from 1961 through 1965. Figures for earlier years were not available. Data are for July of each year.

TABLE 2

Activity (in millions of dollars) for Federal Reserve Member banks in Maryland.
1961 – 1965

Year	Deposits			Loans	Investments
	Demand	Time	Total		
1961	1062	436	1498	686	600
1962	1171	561	1732	849	676
1963	1225	626	1851	994	650
1964	1234	713	1947	1118	654
1965	1336	782	2118	1268	670

SOURCE: Federal Reserve Bank of Richmond, Research Department – Business and Financial Indicators

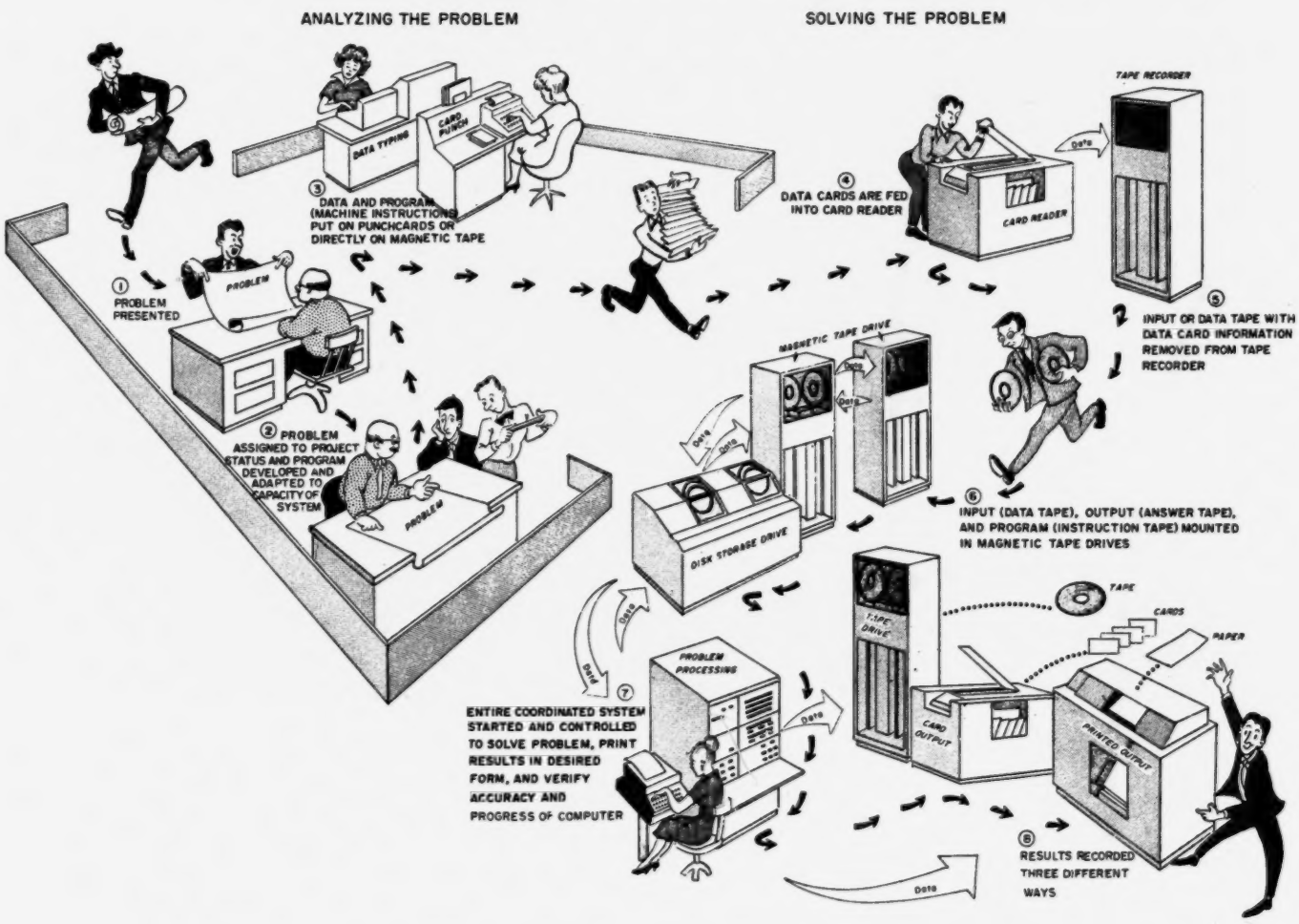
CHAPTER 5 – DESCRIPTION OF THE PROCESS

There is no standardized or uniform system of bank accounting by automation, as each manufacturer of the equipment designed has his own system, although the results are the same.

(a) Large Commercial Bank in Baltimore

Figures 3, 4 and 5 are schematics of the work flow in the Electronic Data Processing Department of a large commercial bank in Baltimore with total deposits of nearly $350,000,000. This equipment was fully operational in early 1961.

TYPICAL COMPUTER CONFIGURATION


ANALYZING THE PROBLEM
SOLVING THE PROBLEM
DATA TYPING
CARD PUNCH
③ DATA AND PROGRAM (MACHINE INSTRUCTIONS) PUT ON PUNCHCARDS OR DIRECTLY ON MAGNETIC TAPE
④ DATA CARDS ARE FED INTO CARD READER
CARD READER
TAPE RECORDER
Data
① PROBLEM PRESENTED
PROBLEM
② PROBLEM ASSIGNED TO PROJECT STATUS AND PROGRAM DEVELOPED AND ADAPTED TO CAPACITY OF SYSTEM
⑤ INPUT OR DATA TAPE WITH DATA CARD INFORMATION REMOVED FROM TAPE RECORDER
MAGNETIC TAPE DRIVE
⑥ INPUT (DATA TAPE), OUTPUT (ANSWER TAPE), AND PROGRAM (INSTRUCTION TAPE) MOUNTED IN MAGNETIC TAPE DRIVES
DISK STORAGE DRIVE
TAPE
CARDS
PAPER
TAPE DRIVE
CARD OUTPUT
PRINTED OUTPUT
PROBLEM PROCESSING
⑦ ENTIRE COORDINATED SYSTEM STARTED AND CONTROLLED TO SOLVE PROBLEM, PRINT RESULTS IN DESIRED FORM, AND VERIFY ACCURACY AND PROGRESS OF COMPUTER
⑧ RESULTS RECORDED THREE DIFFERENT WAYS

WORK FLOW

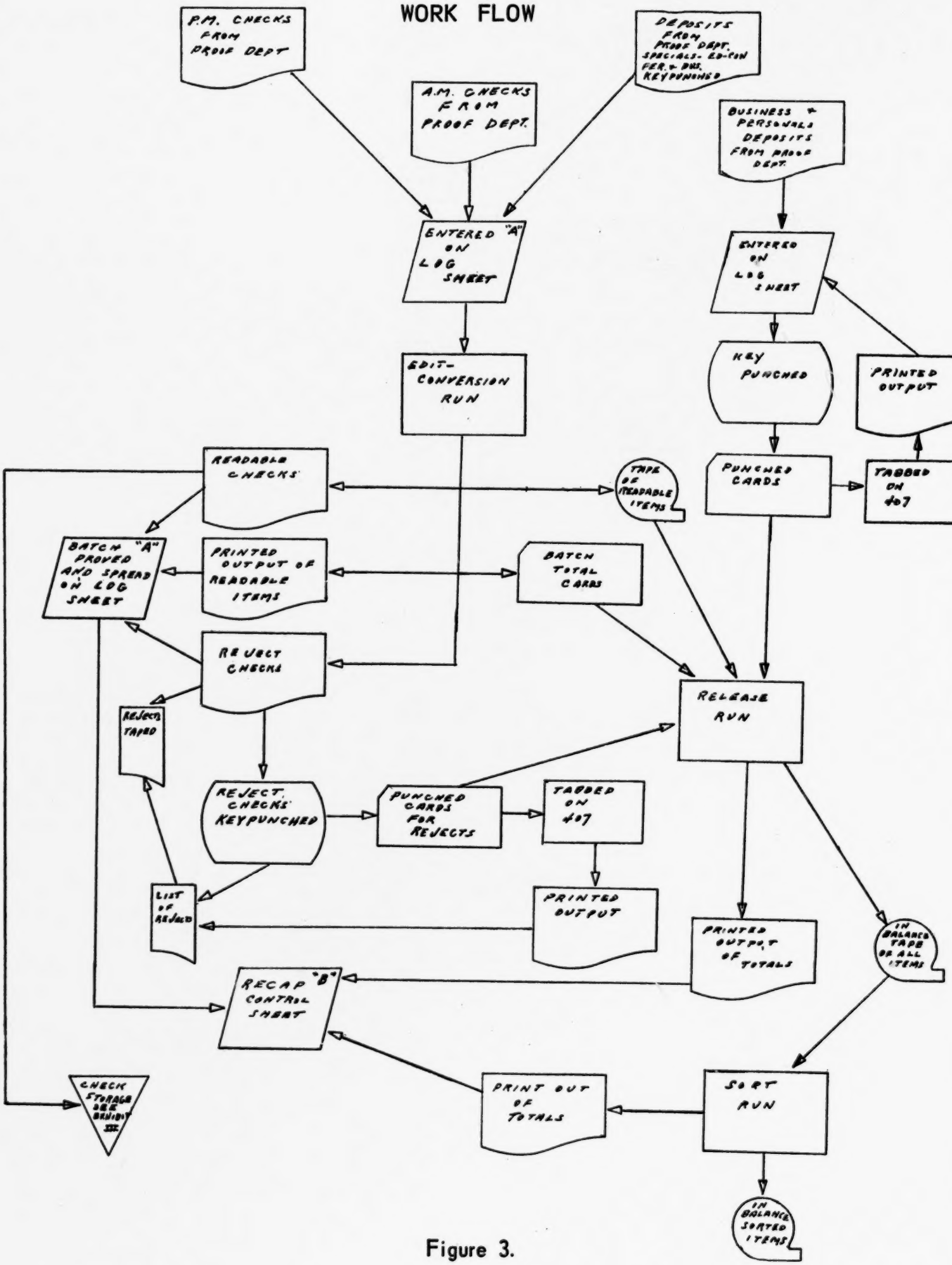


Figure 3.

WORK FLOW

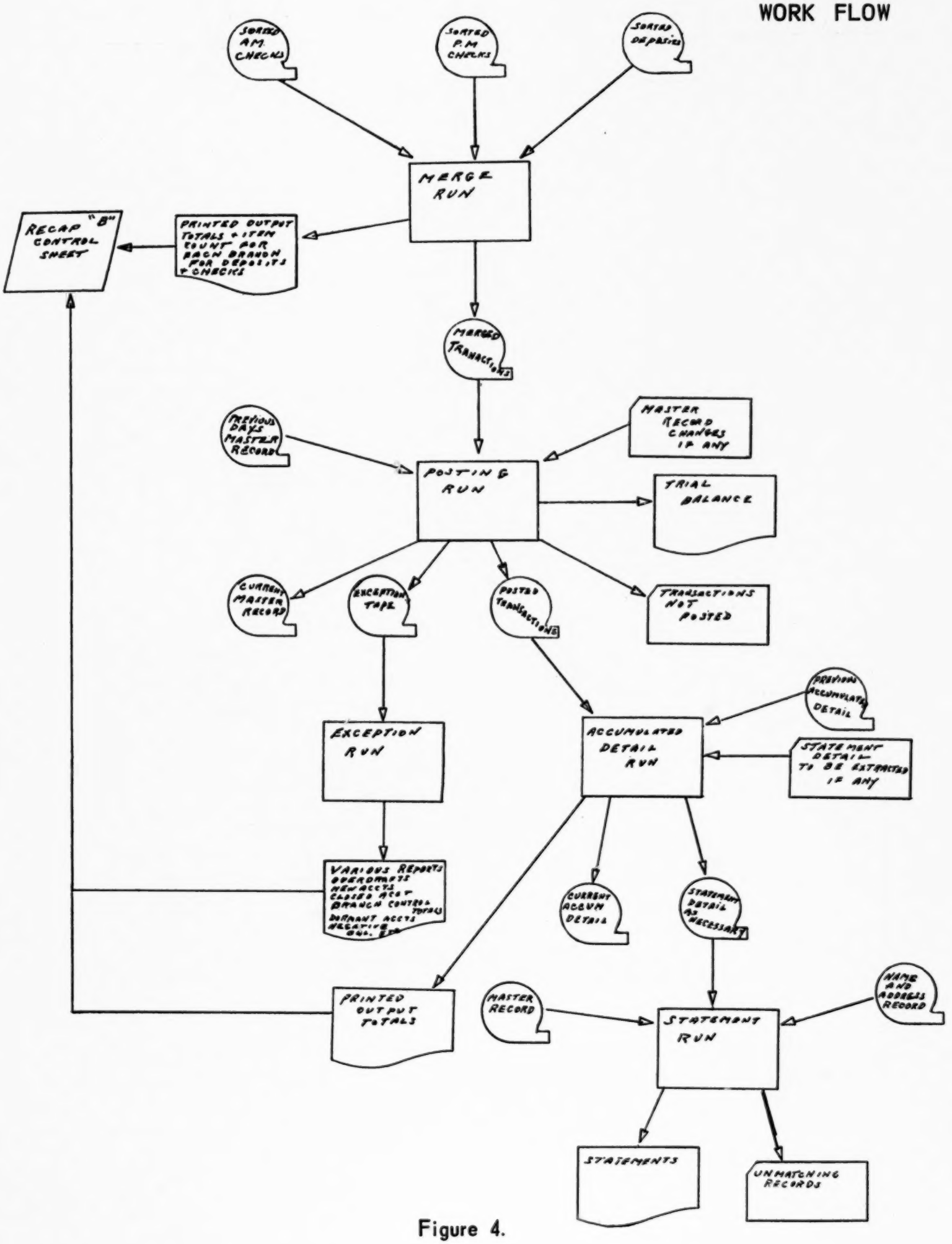


Figure 4.

WORK FLOW

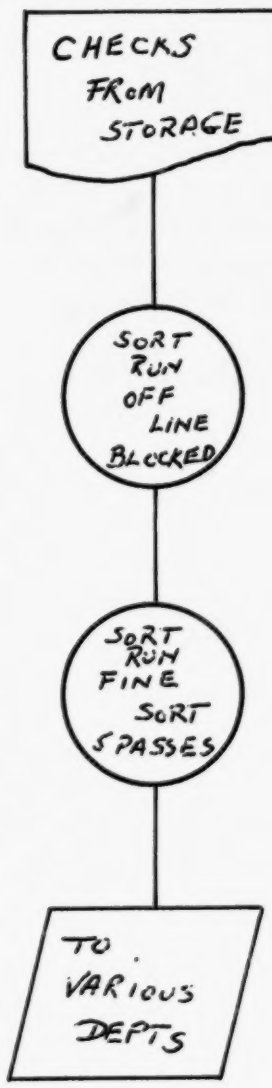


Figure 5

All checks are processed through a magnetic character reader-sorter. Checks to be fully qualified must bear along their lower edge the transit routing account number and the amount of the check. Provision is also made for "process control" to determine the difference between a batch control and the individual physical items (checks).

If all information is valid as the check is being read, it will be recorded on a magnetic tape and on a printed paper form. If not valid in all particulars, the check will be rejected for later processing. Each valid check and all other checks in the batch are proved back to the sending bank's total by a Data Examination Clerk.

The physical item is then stored in the computer room until the full day's work has been processed.

After the day's work has been proved, each item is then put through the magnetic character reader-sorter for the purpose of sorting, thus placing such items in account number sequence. They are then sent to the Bookkeeping Department for filing in customer's account folder to be held there until such time as a statement is rendered, at which time the statement and checks listed thereon are forwarded to the customer.

Reject checks are given to a Key-Punch Operator who enters the essential data on a card. These cards along with in-clearing magnetic tape previously constructed (with valid checks) are returned to the computer room for the purpose of combining both to a new magnetic tape and on the printed form. This new tape total must then prove back to the sending banks combined total.

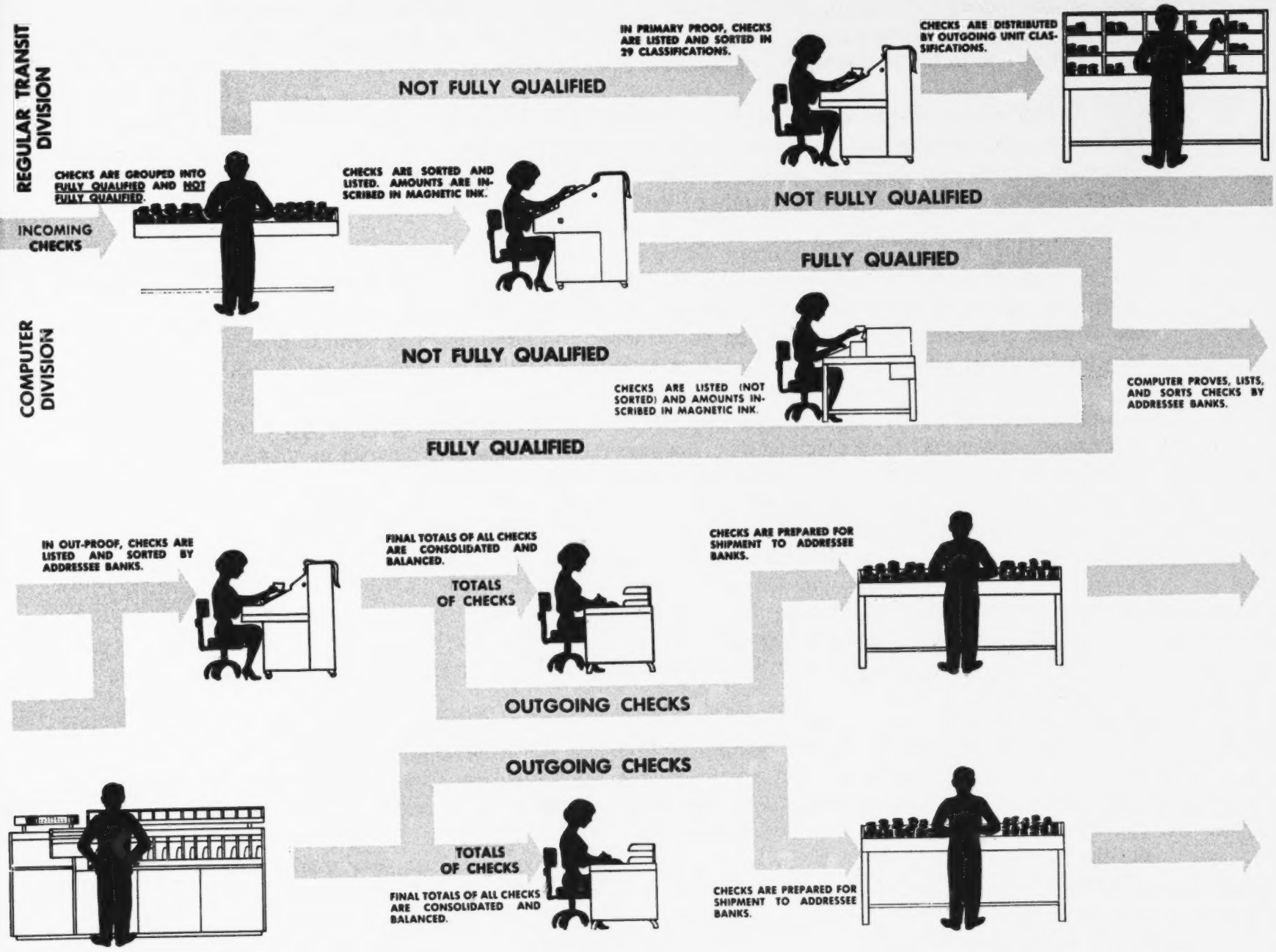
The magnetic tape is processed through a series of sorting operations and the end result is another magnetic tape with all checks in the day's work being in account number sequence.

Through another computer operation this sorted magnetic tape is merged with a master record tape containing account number, previous statement balance and current balance as of the previous working day, which updates the account by subtracting the amount of the check or checks from the balance as of the previous working day. A new master tape is thus created with each account's updated balance.

During the month, therefore, any activity has been accumulated on a magnetic tape, until such time as statements are to be rendered. At this time the activity for a group of accounts is extracted by a computer operation and printed on the standard statement form.

Statements are sent to Statement Auditors who prepare them together with the physical items for mailing to the customer.

(b) Federal Reserve Bank of Richmond


REGULAR TRANSIT DIVISION
COMPUTER DIVISION
INCOMING CHECKS
CHECKS ARE GROUPED INTO FULLY QUALIFIED AND NOT FULLY QUALIFIED.
CHECKS ARE SORTED AND LISTED. AMOUNTS ARE INSCRIBED IN MAGNETIC INK.
IN PRIMARY PROOF, CHECKS ARE LISTED AND SORTED IN 29 CLASSIFICATIONS.
CHECKS ARE DISTRIBUTED BY OUTGOING UNIT CLASSIFICATIONS.
NOT FULLY QUALIFIED
NOT FULLY QUALIFIED
FULLY QUALIFIED
NOT FULLY QUALIFIED
CHECKS ARE LISTED (NOT SORTED) AND AMOUNTS INSCRIBED IN MAGNETIC INK.
COMPUTER PROVES, LISTS, AND SORTS CHECKS BY ADDRESSEE BANKS.
FULLY QUALIFIED
IN OUT-PROOF, CHECKS ARE LISTED AND SORTED BY ADDRESSEE BANKS.
FINAL TOTALS OF ALL CHECKS ARE CONSOLIDATED AND BALANCED.
TOTALS OF CHECKS
CHECKS ARE PREPARED FOR SHIPMENT TO ADDRESSEE BANKS.
OUTGOING CHECKS
OUTGOING CHECKS
TOTALS OF CHECKS
FINAL TOTALS OF ALL CHECKS ARE CONSOLIDATED AND BALANCED.
CHECKS ARE PREPARED FOR SHIPMENT TO ADDRESSEE BANKS.

FIFTH DISTRICT EQUIPMENT: Following the Federal Reserve pilot tests, the Federal Reserve Bank of Richmond ordered a high-speed electronic check-processing system. This system, delivered at the Richmond Head Office in October 1962, consists of five separate components which work together under the control of one central processor. The processor is the "brain" of the system, enabling it to sort, list, and accumulate totals as necessary in the handling of checks. It works under the control of a stored program of instructions which are read into its 4,800-position core memory by use of punched cards. It contains the circuitry and internal logic necessary to enable the five units to work in unison. Various registers and indicators are available to inform the computer operator of the status of each of the units.

The other four units are divided into two classes, input and output. These are the data processing terms which indicate whether the data are being read into the system or are the delivered results of the equipment's work.

INPUT UNITS: The input units are the check sorter-reader and the card reader. The card reader transfers data from punched cards to the memory of the central processor at the rate of 200 cards per minute. This device is primarily used for reading into the memory unit instructions from punched cards, but is also used at other times for reading into the unit various control and balancing totals used for settlement purposes.

The check sorter-reader accepts the vast bulk of the raw data in the form of "Qualified" checks, or checks that meet all the technical requirements for machine processing. These documents are read and sorted in 12 pockets at speeds up to 1,560 items per minute, the exact rate depending on the dimensions of the check.

OUTPUT UNITS: The output units consist of the multiple tape lister and the card punch. Normally, the data from a given check are printed on any two of six available tapes. In this operation, the amount, the pocket to which sorted, and the transit number of the checks are printed at speeds up to 1,600 lines per minute. The card punch is used to punch cards containing totals of pockets, totals of drawee banks, and other control figures which can be fed back into the machine for subsequent balancing or which can be used for final balancing operations at the end of the day. Since many of the accounting operations of the Head Office are processed on another type of computer, the transit system also prepares punched cards which are used as input data for this other computer.

MECHANIZED PROCEDURE: To qualify fully for processing on automatic equipment at Federal Reserve Banks, checks must bear, in magnetic ink print, the routing symbol-transit number of the drawee bank and the amount of the check. Approximately 25,000 fully qualified checks are received at the Richmond Head Office daily, most coming from other Federal Reserve Banks and from large member banks. For a computer this is an extremely small number, and it is necessary that it be increased greatly if a reasonable degree of efficiency is to be achieved.

Approximately 68% of the checks received at the Richmond Head Office have the routing symbol-transit number preprinted in magnetic ink, and thus require only the encoding of their amounts in magnetic ink in order to be fully qualified for machine processing. Such encoding is provided through an operation called "amount-encoding," after which a much larger number of checks can be fed through the computer. Amount-encoding, along with an appropriate proof operation, is done primarily on two separate machines known as unit inscribers.

Cash letters containing fully qualified checks are processed directly on the computer since no amount-encoding is required. Other checks that require amount-encoding are combined with the fully qualified items and fed into the computer, where the totals necessary to balance the incoming cash letters are derived. Items not having the preprinted routing symbol-transit number or which the machine cannot read because of faulty encoding are rejected by the computer and returned to the regular proof machine units where they are handled manually.

This Bank must send checks to approximately 700 recipients every day. To achieve this breakdown it is necessary that the checks be passed through the sorter-reader more than once. On the average, each check handled in the Head Office is passed through the sorter-reader 2.5 times before it is finally sorted to the proper end point. The average daily volume of work now handled on the computer is 150,000 items per day. Accordingly, the machine must list and total approximately 375,000 items before the checks are completely processed and ready to be mailed to the banks on which they are drawn or to other Federal Reserve Banks.

CHAPTER 6 – EFFECTS OF AUTOMATION

The effects of automation on one large commercial bank is typical of that which has occurred in the other large commercial banks located in Baltimore. As can be seen in the accompanying table of the automated departments, the bank had increased its work force. Increased business was partly responsible, but most of the rise came about because the bank began to automate, eliminating some positions, creating new ones and adding more workers in others.

Why did the bank feel a need to automate? In order to fully appreciate the reasons why it was necessary to automate, it is interesting to go back a number of years to trace the growing pains experienced in this institution. In 1938 the bank established a special checking account system which accommodated many more customers who could not afford to tie up the sums generally required as deposits against the writing of checks in regular accounts. During World War II the number of special checking accounts increased greatly, thus placing a still greater burden on the bookkeepers needed to maintain the accounts. It was therefore necessary to use a second shift to handle the large volume of checks. By 1953, the bank officials decided that a better method of handling, particularly special checking accounts, would have to be used. Thus, a post-to-check system, in which posting was made direct to the physical document was instituted in 1953. This system was used until late 1957 when it was decided to utilize the facilities of a Service Bureau which up-dated all accounts and took trial balances. The bank, however, sent out its own statements to its customers. These arrangements continued until the middle of 1960 when the bank in anticipation of delivery of its first computer, took over all functions again. The computer was delivered in late 1960 and was in full operation in early 1961. The bank felt a need to automate because of the great increase in the volume of checks handled. Also, the bank considered that lack of space, or in other words, the need for much more space together with increases in labor costs were impelling enough reasons for converting.

The change-over was very expensive. First cost was a continuing one but the break-even point was reached in about two years. The change-over took approximately six months during which time it was necessary to increase the work force until the phasing out of certain functions was completed. The use of the installed equipment resulted in a considerable amount of shifting of personnel from one job to another. It took six months to train personnel who were assigned to the operational end and nine to twelve months for programming duties. Thus, the installation of Electronic Data Processing equipment at this bank did not have as its consequence a wholesale reduction in personnel, there was no unemployment caused by it; but in fact resulted in adding more workers. In comparing the new system to the old one, it is at first reasonable to assume that less personnel would be needed with an automated system, This assumption would be true, if the volume of business remained constant, however, due to the steady increase in the number of checks and the increase in loan and trust activities, this assumption loses its significance, because it has been necessary to increase the number of workers. Conversely, if the bank had not automated, it would have been necessary to employ additional personnel to keep up with increased volume. In all instances, those persons whose positions were abolished by EDP were placed in other related positions which had to be increased in number to handle the additional workload. Thirty-one positions for Bookkeeping Machine Operator were abolished in the Regular Checking Department. At the same time, however, fourteen additional positions were established for Junior Account Clerk, four for Return Items Clerk and two for Floater Clerk.

In the Special Checking Department, eleven Bookkeeping Machine Operator positions were abolished. Nine of these people were given the position of Junior Account Clerk, which

was added to this department to handle the type of work made necessary by the new processes. One additional Floater Clerk position was established along with two Return Items Clerk and three Statement Auditor positions. One additional Supervisor and one Administrative Assistant were needed to relieve the manager of some of the administrative burdens brought about by the changes.

Two additional positions for Check Book Order Clerk were established in the Addressograph Department to handle an increase in activity in that area.

All of the above were not new jobs requiring new codes, but were additions to the positions which were already in use to some extent before the changeover.

A completely new unit, the Electronic Data Processing Department was brought into being. The new department was divided into two sections, the Systems and Procedures section and the Processing section. The following were new positions created to operate the System and Procedures section: one Manager, five Systems Analysts (including three trainees), and four Programmers (including two trainees). In the Processing section, one Manager position was created and two Supervisors of Computer Operators. Six Computer Operators were hired to operate the computers as were 30 Data Examination Clerks, 2 Supervisors of Data Examination Clerks and 2 Savings Bond clerks. One Sorter, Machine, completes the employment roster for this section.

In the Proof-Transit Department 5 positions for Encoder Operator were created.

Six other positions were abolished; 3 Junior Analysis Clerks from the Analysis Department and 3 Bookkeeping Machine Operators from the Retail Banking Department.

All persons whose positions were abolished were transferred into the additional positions of Junior Account Clerk, Return Items Clerk and Floater Clerk and the newly created positions of Supervisor, Data Examination Clerks and Data Examination Clerk.

During conversion to the new equipment, it was decided that a total of 99 created and additional positions were necessary to carry out the work of the automated departments of the Operations Division. Forty-eight of these were filled, after retraining, by the persons whose positions had been abolished.

TABLE 3 shows by title, the number of positions created, the number abolished and the number increased.

TABLE 3

Positions Created, Abolished and Increased
by
Installation of EDP Equipment

Organization Unit	Positions Created	Positions Abolished	Positions Increased
Operations Division			1 Secretary
EDP Dept.			
Systems	1 Manager 2 Systems Analysts 3 Systems Analyst Trainees 2 Programmers 2 Programmer Trainees		
Processing	1 Manager 2 Supervisor, Computers 6 Computer Operators 1 Sorter 2 Supervisor, Data Clerks 30 Date Examination Clerks 2 Savings Bond Clerks		
Proof & Transit	5 Encoder Operators		
Regular Checking		31 Bookkeeping Machine Operators	14 Junior Account Clerks 4 Return Item Clerks 2 Floater Clerks
Special Checking		11 Bookkeeping Machine Operators	1 Supervisor 1 Administrative Ass't. 9 Junior Account Clerks 1 Floater Clerk 2 Return Item Clerks 3 Statement Auditors 3 Check Book Order Clk.
Addresso-graph Analysis		3 Jr. Analyst Clerks	
Loan Division			
Retail Banking		3 Bookkeeping Machine Operators	
TOTAL	59	48	40

SOURCE: Large Commercial Bank, Baltimore

CHAPTER 7 – CONCLUSION

While the outlook is for continued growth in the industry, bankers do not agree on the amount of employment expansion likely to take place.

A successful bank, like a winning football team, is often the result of successful recruiting. With recent burgeoning of demand for clerical workers and executives at all levels, the recruitment of capable men and women in sufficient numbers is becoming increasingly difficult. The largest banks, with trained recruiters, training programs, and a wide range of possible promotions for new employees may find the task less difficult than the smaller banks. Small banks may also find the problem intensified by the loss of some of their best personnel to more attractive positions in larger banks, but the movement is not all in one direction. Larger banks frequently help their smaller correspondents fill key positions. Changes have taken place in hiring and training policies throughout the economy, which with the rapid expansion in banking, has made the ladder to the top much shorter. Many new officers have more formal education than was typical a few years ago, but less practical experience. Higher starting salaries, training programs, and rapid promotions have helped fill the executive ranks, but banks have been forced to other means to meet growing shortages of clerical personnel. Some banks have found handicapped workers, unsuited to many types of manufacturing and sales work, to be ideal for a variety of clerical jobs. Others have turned to part-time help, primarily housewives and college students, to meet peak seasonal or weekly demands. However, most banks are meeting the challenge of rapid growth through the use of E.D.P. with the ability of the machines to store large amounts of information in relatively little space, and to process and deliver the information as required.

So far the high speed machines have not caused overall reductions in employment. However, many old-fashioned jobs are being eliminated and employees are being transferred to new ones. For instance, Bookkeeping Machine Operators are becoming Key-Punch Operators. The number of unskilled jobs will not decline, though unskilled jobs will continue too as a proportion of all jobs. Every effort has been made to retain workers. Any excess staff is eliminated through normal attrition. Many banks, in the initial phases of the change-over, are finding employment slightly greater than before the adoption of the machines because of temporary duplication. It takes considerable time to make the switch and work out all the "bugs" in the new systems. Consequently, authorities feel that the impact on jobs in banking will not be apparent for several years.

Computers and other electronic devices are not, in general, replacing present bank employees. Instead, they are being used to make possible a wider range of services, sometimes at greater speed, and to handle volumes of business which would require much larger clerical staffs - if they could be found. To the extent that it affects personnel policies, electronic data processing is primarily a tool for coping with shortages of workers, rather than replacing existing employees.

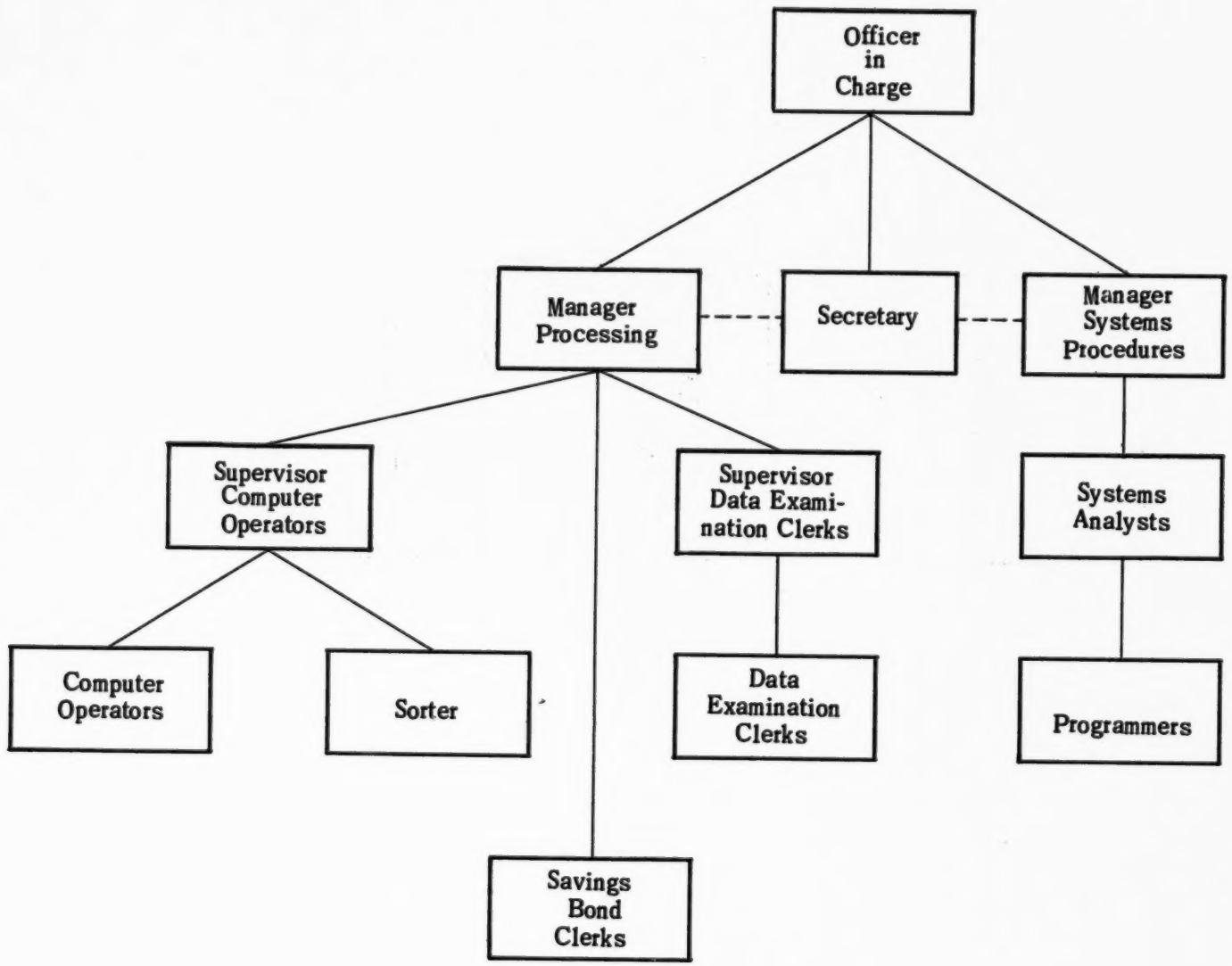
APPENDIX 1

Job titles and codes for new jobs, organization charts and job descriptions for new and expanded jobs resulting from installation of EDP equipment in one large commercial bank.

Company titles, DOT titles and codes for new jobs are listed below;

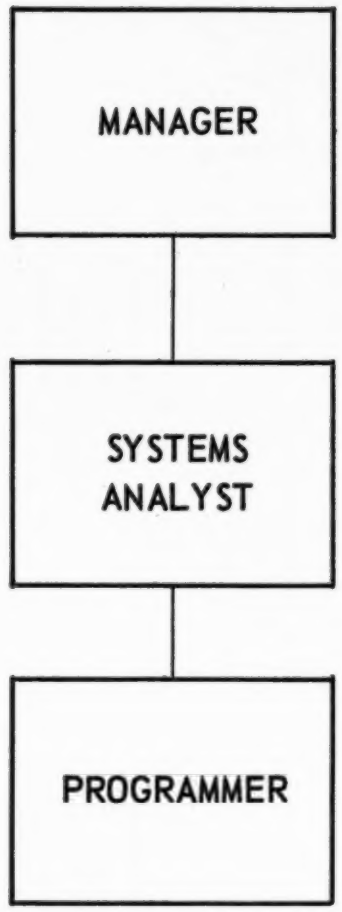
COMPANY TITLE	DOT TITLE (3rd ED.)	CODE
Manager (systems and procedures)	Manager, EDP	169.168
Systems Analyst	Systems Analyst, Business EDP	012.168
Programmer	Programmer, Business	020.188
Manager (processing)	Manager, EDP	169.168
Supervisor, Computer Operations	Supervisor, Computer Operations	213.138
Computer Operator	Digital Computer Operator	213.382
Sorter	Sorting Machine Operator	213.885

E.D.P. DEPARTMENT



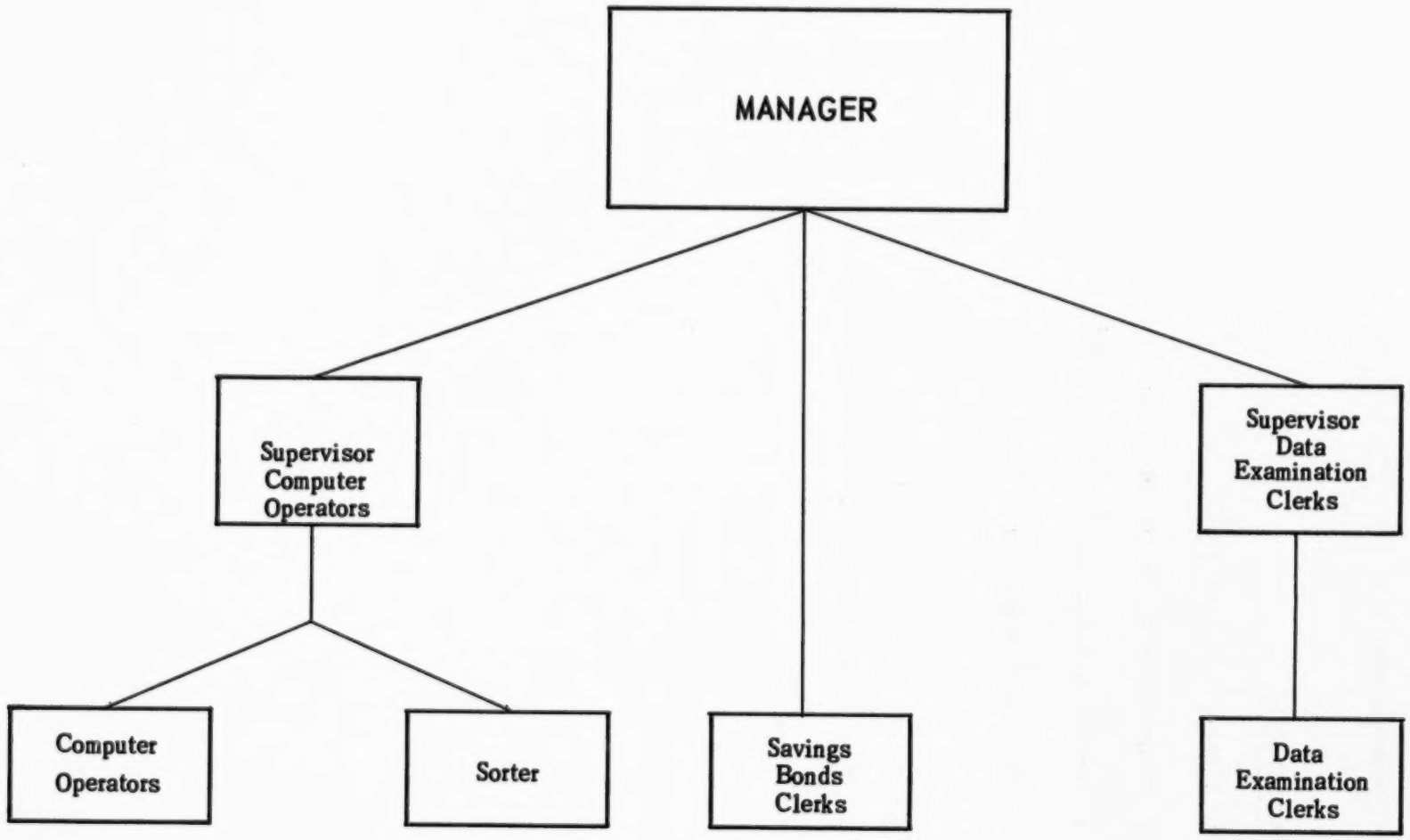
E.D.P. DEPARTMENT

Systems and Procedures



E.D.P. DEPARTMENT

Processing Section



SECRETARY

Under the direction of the officer-in-charge of the Electronic Data Processing Department takes and transcribes dictation; performs minor administration duties. Types and files correspondence.

Skills Necessary:

1. General clerical ability.
2. Above average finger dexterity.
3. Ability to take shorthand and to type.
4. Must have a facility with words.

Education:

1. High school graduation from the commercial field with courses in shorthand and typing.

MANAGER
(Systems and Procedures Section)

Under the direction of the officer-in-charge of the Electronic Data Processing Department, supervises, schedules and coordinates planning activities of the Systems and Procedures Section. Consults with Systems Analysts to define equipment needs. Reviews project feasibility studies. Establishes work standards. Directs training of subordinates.

Skills Necessary:

1. Verbal ability to translate technical terminology into language understandable to new technical supervisors.
2. Numerical ability to solve mathematical problems and to prepare statistical reports.
3. Considerable clerical ability plus ability to supervise clerical workers.
4. Ability to understand charts and diagrams.
5. Thorough knowledge of equipment used.

Education:

College graduation with major in business administration and accounting - experience in systems analysis and programming is desirable.

SYSTEMS ANALYST

Analyzes banking problems to refine their formulation and convert them to a programable form for application to a digital electronic data processing system.

Skills Necessary:

1. Must be able to interpret diagrammatic charts.
2. Must possess a high level of mathematical ability.
3. Must possess the ability to write reports and discuss problems with supervisors and subordinates.
4. Must possess considerable clerical aptitudes; operate fairly complex devices.

Education:

College degree in the area of business administration is preferred. Programmee not possessing a degree could work up to the position of Systems Analyst through experience and by taking relevant courses.

PROGRAMMER

Converts symbolic statement of banking problems, as received from Systems Analyst, to detailed flow charts for coding into computer language. Analyzes all or part of work flow chart or diagram representing banking problem by applying knowledge of computer capabilities, subject matter, algebra, symbolic logic to develop sequence of program steps.

Skills Necessary:

1. Must possess a high degree of mathematical and clerical ability; be able to operate fairly complex devices.
2. Must be able to interpret diagrams which represent work flow.
3. Must be able to originate work flow charts which proceed from step to step in a logical sequence.

Education:

College graduate with business administration backgrounds are preferred. High school graduates with approximately one year of training in programming are acceptable.

MANAGER (PROCESSING SECTION)

Under the Direction of the Officer-in-Charge of the Electronic Data Processing Department, supervises, schedules and coordinates activities of the Processing Section. Revises computer operating schedule to introduce new program testing and operating runs. Establishes work standards. Directs training of subordinates.

Skills Necessary:

1. Ability to converse with and coordinate activities of subordinates.
2. Numerical ability to solve mathematical problems.
3. Considerable clerical ability.
4. Ability to understand charts and diagrams.
5. Ability to translate technical terms into language readily understandable by non-technical supervisory personnel.

Education:

Two years of formal post-high school training in data processing with courses in business administration and accounting--experience in computer operations is desirable.

SUPERVISOR, COMPUTER OPERATIONS

Supervises and coordinates activities of workers who operate data-processing machines: Assigns personnel and schedules work flow to facilitate completion of day's work. Directs training of personnel in the operation of electronic digital computers and peripheral and off-line auxiliary equipment. Works closely with programming personnel.

Skills Necessary:

1. Above average arithmetical ability and a knowledge of algebra, and to set up operating changes.
2. Ability to confer with technical personnel and prepare written reports.
3. Ability to train and to oversee the work of subordinates.
4. Above average clerical ability.
5. Spatial and form perception to prepare wiring diagrams and to wire control panels.
6. Must be thoroughly familiar with the operation of computers used in the section.

Education:

1. High school diploma plus six months to one year of technical schooling in data processing, plus one to two years of actual experience as a computer operator; other training courses such as business administration and accounting, or higher mathematics are desirable.
2. A college degree in a business-related field is desirable, but not actually necessary.

COMPUTER OPERATOR

Monitors and controls electronic digital computers or off-line peripheral machines to process banking data, according to operating instructions. Sets control switches to integrate and operate equipment according to the program and data requirements specified in written instructions. Selects and loads input and output units with tapes for operating runs. Observes machines and control panel closely to detect malfunctioning and makes adjustments or corrections as may be necessary. Unloads and labels input and output magnetic tapes and places them in storage awaiting further merging with the next day's work.

Skills Necessary:

1. Above average arithmetical ability and an elemental knowledge of algebra.
2. Verbal ability to understand technical information and instructions and to discuss procedures with supervisor.
3. Above average clerical ability.
4. Above average finger dexterity and eye-hand coordination.

Education:

1. High school diploma plus six months to one year of technical schooling in data processing. Additional training for familiarization with the particular equipment to be operated is provided by the manufacturer after the employee is hired.

SORTER

Operates automatic sorting machine used to sort tabulating cards into specific groups. Riffles (flips) cards to prevent them from sticking together, and places them into intaking hopper. Uses button controlled panel board to carry out sorting operations. Removes sorted cards from output bins after each run.

Skills Necessary:

1. General clerical ability; operate simple sorting machine.
2. A high average manual dexterity and good eye-hand coordination.

Tasks are of a repetitious nature and temperament of the job holder should be such that he would be content with this type of work.

Education:

1. High school graduate with commercial background.

SUPERVISOR, DATA EXAMINATION CLERKS

Supervises the performance of duties of the Data Examination Clerks in proving back to the proof totals, thus proving back to the sending bank's totals. Assists subordinates to correct errors and occasionally participates in the work.

Skills Necessary:

1. General clerical ability; ability to use simple office machines plus keypunch.
2. Must possess average numerical ability and have a knowledge of bookkeeping.
3. Ability to train others, to assign workloads and to supervise the work of subordinates.
4. Average eye-hand coordination and finger dexterity.

Education:

1. High school diploma with a commercial background.

DATA EXAMINATION CLERK

Proves back to the proof totals, items received from the Proof department (thus proving back to the sending bank's totals). Also operates key-punch machine to key-punch the essential data of reject checks on punch cards.

Skills Necessary:

1. General clerical ability; ability to use simple office machinery plus key-punch.
2. Must possess average numerical ability and have a knowledge of bookkeeping.
3. Average eye-hand coordination and finger dexterity.

Education:

1. High school diploma with commercial background.

SAVINGS BOND CLERK

Handles transactions involving the processing, sale and reporting of bond activity. Types Series E, H and Retirement Plan bonds. Records serial number on forms provided. Lists amounts on IBM sheet and obtains sub-total of the number of bonds in each denomination and also obtains maturity value of bonds listed. Maintains Bond Register of all bonds received from Federal Reserve and also issued or transferred to branches. Maintains records of all bonds issued by branch offices. Prepares semi-monthly reports for Federal Reserve Bank. Takes semi-monthly inventory of bonds on hand. Balances and proves all transactions.

Skills Necessary:

1. General clerical ability; use simple office machinery.
2. Must be familiar with elementary bookkeeping and have some numerical ability.
3. Average finger dexterity and eye-hand coordination to enable the occupant to operate sorter and accounting machines.

Education:

1. High school graduate with a course in bookkeeping. On-the-job training for approximately six months to reach proficiency.

ENCODER OPERATOR

Operates a proof machine to imprint in magnetic ink on each check and deposit slip the dollar and cents amount of each such item processed. Totals are obtained on paper tape and these totals are reconciled to the amount previously submitted with the batch of items.

Skills Necessary:

1. General clerical ability.
2. Average arithmetical ability.
3. Above average finger dexterity and eye-hand coordination.

Education:

1. High School diploma with a commercial background.

JUNIOR ACCOUNT CLERK (REGULAR CHECKING)

Verifies the correctness and acceptability of checks received by the section. Locates checks to be returned to endorser due to any irregularities in signature, or other important details. Files checks, deposit slips, memos and other transactions into account guides. Makes certain that depositor's name and number agree with name and number on account. Routes incorrect items out of unit; files correct items. Determines if funds are sufficient if branch requests validity of any specific check. Prepares Hold Orders, supplies information to customers regarding accounts to be billed. Maintains files in working order.

Skills Necessary:

1. General clerical ability; average arithmetical ability.
2. Average manual dexterity and eye-hand coordination.

Education:

1. High school diploma with commercial background.

RETURN ITEM CLERK (REGULAR CHECKING)

Processes dishonored checks. Receives and sorts checks into categories. Routes collection items into collection department for processing. Consults files for procedures requested by customers for handling dishonored checks. Notifies appropriate bank employees to hold amount of check against last endorser's account. Prepares charge tickets listing amount of check and reasons for dishonoring. Prepares collection sheets which prove the work of each clearing, and prepares a settlement sheet to prove the daily work of the section. Handles some customer complaints.

Skills Necessary:

1. Must know bank procedures for handling dishonored checks.
2. General clerical ability plus the ability to type and use simple office machinery.
3. Average manual dexterity and eye-hand coordination.
4. Must be tactful and patient in dealing with customers.

Education:

1. High school diploma with commercial background.

FLOATER CLERK (REGULAR CHECKING)

Participates in processing and maintaining records for regular checking accounts. Files evidence of transactions into account folders. Verifies that items are charged to correct account and that checks are acceptable. Supplies information to other bank employees regarding accounts. Processes overdrafts, stop payments, post dated and stale dated checks and prepares charge slips. Adjusts records to correct posting errors and other irregularities.

Skills Necessary:

1. Must possess a good general clerical ability; be able to operate simple office machinery.
2. Must have some familiarity with banking procedures.
3. Must possess an elemental knowledge of bookkeeping.
4. Must be able to adapt to a number of other jobs, since these people perform wherever they are needed.

Education:

1. High school graduation from the commercial field.

SUPERVISOR

Supervises and participates in the work of the department. Supervises and trains employees in maintaining account records. Observes work flow and reallocates personnel as needed. Discusses work problems with employers and instructs them on procedures in unusual cases. Prepares time and pay records. Participates in all activities of the department. In event of absence of assistant manager, substitutes in the performance of his duties.

Skills Necessary:

1. General clerical ability; use simple office machinery.
2. Must know bookkeeping practices. Must be familiar with many banking procedures and policies.
3. Must be tactful in dealing with customers and employees of unit.
4. Must be able to train other employees.

Education:

1. High school graduation with commercial background is necessary. Business college courses above the high school level are desired.

ADMINISTRATIVE ASSISTANT

Handles all department incoming correspondence, processes return items and stop-payment orders. Supplies information to customers regarding accounts; contacts customers regarding overdrafts they have made. Receives and processes stop-payment orders from customers and branches. Maintains suspense account. Prepares suspense adjustment for deposits which cannot be posted due to insufficient information. Prepares summary reports on over-drawn accounts. Maintains list of account numbers that may be assigned to new accounts. Maintains file of inactive accounts. Telephones other departments to clarify situations involving the maintenance of accurate accounts.

Skills Necessary:

1. General clerical ability; use simple office machinery.
2. General knowledge of bookkeeping procedures; good numerical ability.
3. Must be familiar with the work performed by other persons in unit.
4. Average eye-hand coordination and manual dexterity.

Education:

1. High school education with a commercial background.

JUNIOR ACCOUNT CLERK (SPECIAL CHECKING)

Verifies the correctness and acceptability of checks received by the section. Locates checks to be returned to endorser due to any irregularities in signature, or other important details. Files checks, deposit slips, memos and other transactions into account guides. Makes certain that depositor's name and number agree with name and number on account. Routes incorrect items out of unit; files correct items. Determines if funds are sufficient if branch requests validity of any specific check. Prepares Hold Orders, supplies information to customers regarding accounts to be billed. Maintains files in working order.

Skills Necessary:

1. Average manual dexterity and eye-hand coordination needed.
2. Must possess average arithmetical ability and a general overall clerical ability.

Education:

1. High school diploma with commercial background is necessary.

FLOATER CLERK (SPECIAL CHECKING)

Participates in processing and maintaining records for special checking accounts. Files evidence of transactions into account folders. Verifies that items are charged to correct account and that checks are acceptable. Supplies information to other bank employees regarding accounts. Processes overdrafts, stop payments, post dated and stale dated checks and prepares charge slips. Adjusts records to correct posting errors and other irregularities.

Skills Necessary:

1. Must possess a general clerical ability; be able to operate simple office machinery.
2. Must have some familiarity with banking procedures.
3. Must possess an elemental knowledge of bookkeeping.
4. Must be able to adapt to a number of other jobs. since these people perform wherever they are needed.

Education:

1. High school diploma with a commercial background.

RETURN ITEM CLERK (SPECIAL CHECKING)

Processes dishonored checks. Receives and sorts checks into categories. Routes collection items into collecting department for processing. Consults files for procedures requested by customers for handling dishonored checks. Notifies appropriate bank employees to hold amount of check against last endorser's account. Prepares charge tickets listing amount of check and reasons for dishonoring. Prepares collection sheets which prove the work of each clearing and prepares a settlement sheet to prove the daily work of the section. Handles some customer complaints.

Skills Necessary:

1. Must know bank procedures for handling dishonored checks.
2. General clerical ability; must type and use simple office machinery.
3. Average manual dexterity and eye-hand coordination.
4. Must be tactful and patient in dealing with customers.

Education:

1. High school diploma with a commercial background.

STATEMENT AUDITOR

Audits each statement being rendered to customer. Ensures that all checks posted to the statement are contained therewith. Photographs each item prior to its being forwarded to customer.

Skills Necessary:

1. General clerical ability with some knowledge of bookkeeping; use simple office machinery.
2. Average manual dexterity.

Education:

1. High school graduate with commercial background.

CHECK BOOK ORDER CLERK

Processes customers' check book orders. Prepares charge tickets for imprinting and other charges on each account; fills out printer's order forms; forwards orders to printer. Prepares tickets showing amount to be charged against customer's account. Reconciles bills sent by printer against entries made on bill. Maintains index file cards, supplies information to customers, printers and branch offices. Totals and proves all customer charge tickets prepared during the day. Keeps daily record of imprint, postage, sales tax and total charges.

Skills Necessary:

1. General clerical ability; use simple office machinery.
2. Must be able to copy and record figures legibly; have some degree of numerical ability.
3. Average eye-hand coordination and manual dexterity.

Education:

1. High school diploma with a commercial background.

APPENDIX 2

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